Weekly Report

1. Done

1.1. Submit my survey.

1.2. Read the books about react.js and es6.

1.3. Complete the map part.

1.4. Read papers.

1. **I Know Where You Live: Inferring Details of People's Lives by Visualizing Publicly Shared Location Data** (from CHI)

   This paper focus on analyzing questions as follows:

   1) What is the accuracy of guessing the functional locations with the trajectory data from twitter?
   2) What is the efficiency of textual table, static visualization and animated visualization in this question?

   About privacy：

   1) Contact SNS users for agreement before collect their data and then ask the real locations of functional locations.
   2) Mention how to protect privacy like which personal location should not be shared.

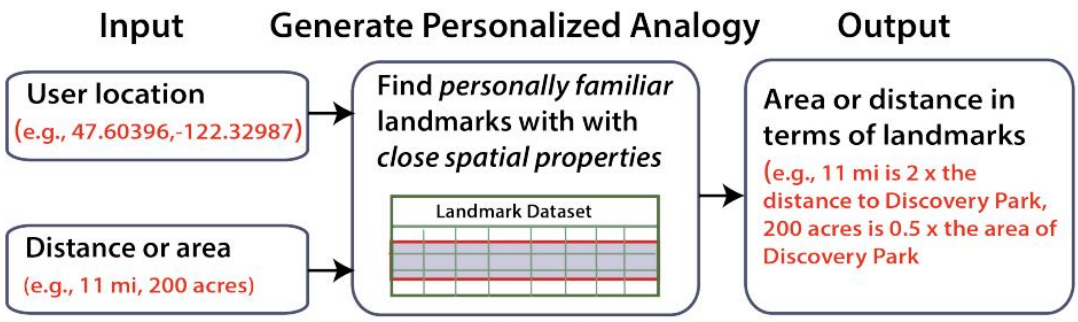
   The result of comparing visual approaches：

   1) Classify participants into three categories including visually inclined, text inclined and hybrid. Most of them are visually inclined.
   2) It is time-consuming to use textual table for resolving, but minority of participants have a high accuracy with textual table.

2. **Generating Personalized Spatial Analogies for Distances and Areas** (from CHI)

   Visualize the area and distance in the textual data with the familiar information of users.

   1) Pipeline:



   2) An approach for generating analogies using energy functions

      Energy function $E(l)$ of a landmark l given user u and target distance t as:

$$E(l) = W_{pf}E_{pf}(u,l) + W_{gf}E_{gf}(l) + W_{mult}E_{mult}(t,u,l)$$

The personal familiarity of a landmark to given a user $E_{pf}(u,l)$ as:

$$E_{pf}(u,l) = distancev(u,l)$$

-The *distancev(u, l)* is the Vincenty distance (Vincenty's formulae an approach to calculate the distance between two points on the surface of a spheroid) between l and u.

The general familiarity of a landmark $E_{gf}(l)$ as:

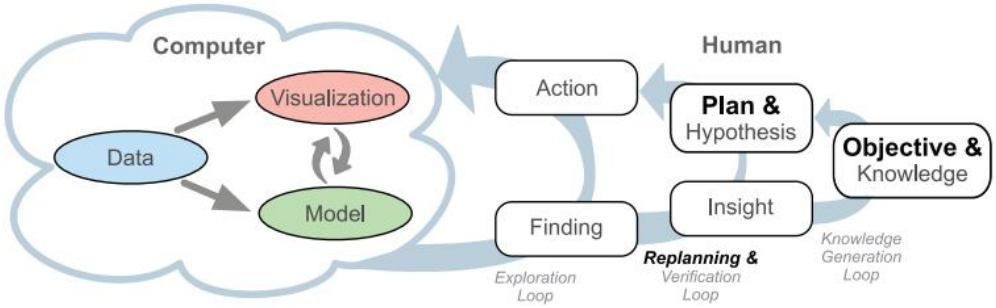
$$E_{gf}(l) = 1/(c_{Flickr}(l)+1)$$

-The $c_{Flickr}(l)$ is the Flickr photo count for land mark l.

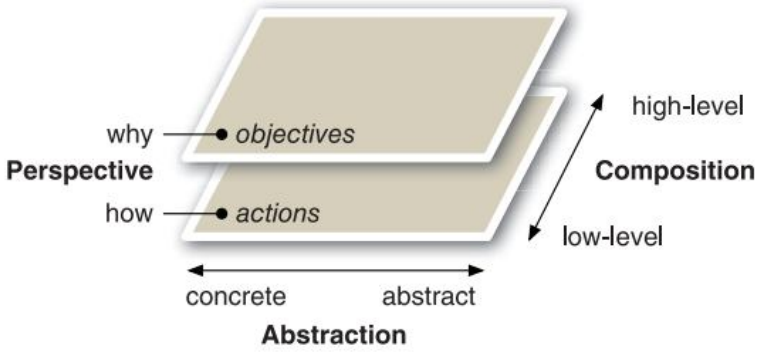
Finally, $E_{mult}(t,u,l)$ is a function of the multiplier required for the distance between u and l to be equivalent to the t.

3. **Task Cube: A three-dimensional conceptual space of user tasks in visualization design and evaluation** (from Information Visualization)

The authors propose to use the more precise terminology of 'objectives' and 'actions' instead of the ambiguous term 'task' and present a conceptual space.



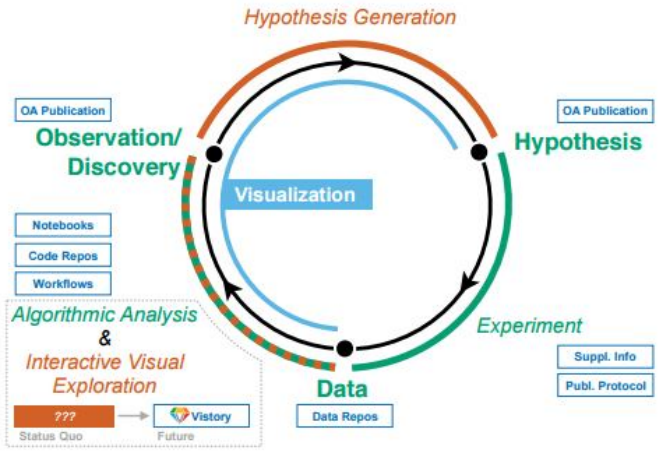
The objective can originate from the user's personal goals, from the foals of the user's organization, or out or pure curiosity. Under the background knowledge about objective, the data and the available tools, the objectives are broken down into manageable subobjectives so that plans are developed. Then, users performs the planned actions by interactions.



The composition and abstraction are continuous dimensions along with the why/how (why refers to objectives and how refers to actions) dichotomy for perspective.

Plenty of taxonomies and a detailed example are given in this paper.

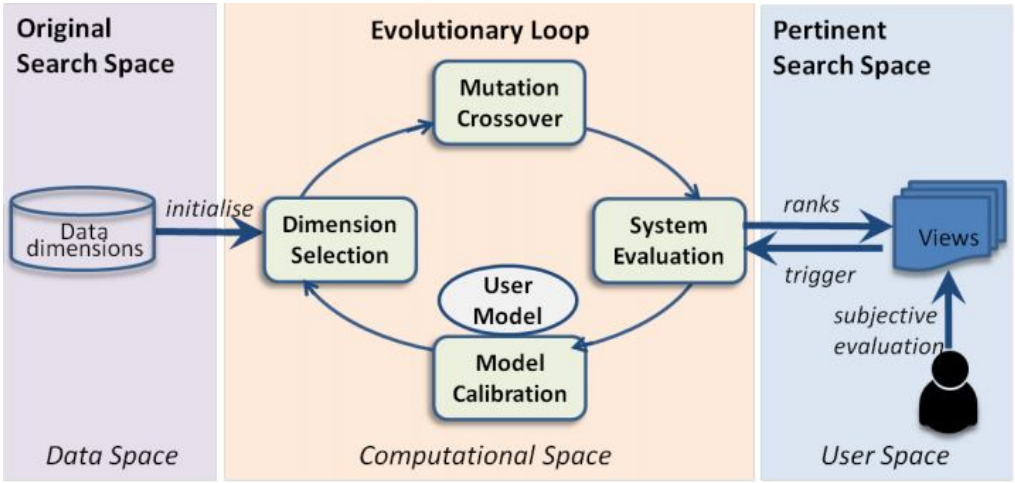
4. **Vistories: Reproducibility, Collaboration, and Communication for Exploratory and Visual Analyses**



Interactive data exploration is essential to guide the data-driven discovery process. Capturing, annotating, and communicating the full provenance of data interpretation is a high priority for Open Science (the movement to make scientific research, data and dissemination accessible to all levels of an inquiring society, amateur or professional) and reproducibility. The "exploration provenance" comprises both data provenance (algorithmic analyses) and interaction provenance (visual exploration).

5. **A Mixed Approach for the Evaluation of a Guided Exploratory Visualization System** (form EuroRV^3)

The Evolutionary Visual Exploration (EVE) framework (for multi-dimensional datasets):



Evaluation of an EVE System:

1) User-centered evaluation: observing the utility and effectiveness of the system for the end-user.
   Criterion: be understandable and can be learnt; can be used to confirm known insight; can be used to discover new insight and generate new hypotheses.
2) Algorithm-centered evaluation: analyzing the computational behavior of the system.
   Criterion: learn from user interactions and adapt some changes.